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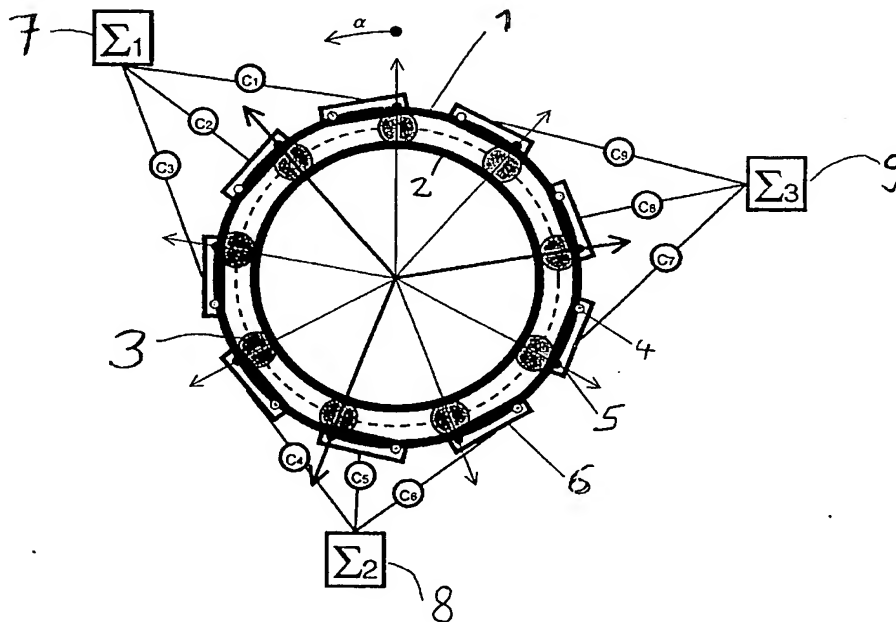
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- (88) Veröffentlichungsdatum des internationalen Recherchenberichts: 4. Dezember 2003

[Fortsetzung auf der nächsten Seite]

(54) Title: ROLLER BEARINGS EQUIPPED WITH SENSORS

(54) Bezeichnung: WÄLZLAGER MIT SENSOREN



(57) Abstract: The invention relates to roller bearings equipped with sensors (4, 5, 6) which serve to measure the longitudinal change in the rolling contact between rolling bodies (3) and a ring (1), whereby area vectors (7, 8, 9) are formed that are transmitted via a defined interface to the evaluating unit situated outside of the roller bearing.

[Fortsetzung auf der nächsten Seite]

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*Zur Erklärung der Zweibuchstaben-Codes und der anderen Abkürzungen wird auf die Erklärungen ("Guidance Notes on Codes and Abbreviations") am Anfang jeder regulären Ausgabe der PCT-Gazette verwiesen.*

**(57) Zusammenfassung:** Wälzlager mit Sensoren (4, 5, 6) zum Messen der Längenveränderung im Wälzkontakt zwischen Wälzkörper (3) und Ring (1), wobei die Bereichsvektoren (7, 8, 9) gebildet werden, die über eine definierte Schnittstelle zur ausserhalb des Wälzlagers angeordneten Auswerteeinheit gelangen.

# INTERNATIONAL SEARCH REPORT

International Application No. ...  
PCT/D/01175

A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G01L5/00 G01M13/04

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G01L G01M

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

| Category * | Citation of document, with indication, where appropriate, of the relevant passages  | Relevant to claim No. |
|------------|---|-----------------------|
| A          | US 5 952 587 A (BROWNER RICHARD W ET AL)<br>14 September 1999 (1999-09-14)<br>cited in the application<br>the whole document<br>----- | 1-3                   |

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

\* Special categories of cited documents :

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- \*E\* earlier document but published on or after the international filing date
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- \*Y\* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- \* & \* document member of the same patent family

Date of the actual completion of the international search

8 October 2003

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# INTERNATIONAL SEARCH REPORT

Information on patent family members

International Application No...

PCT/DE 01175

| Patent document<br>cited in search report |   | Publication<br>date |    | Patent family<br>member(s) | Publication<br>date |
|---|---|---------------------|----|----------------------------|---------------------|
| US 5952587                                | A | 14-09-1999          | DE | 19937203 A1                | 09-03-2000          |
|   |   |                     | SE | 518087 C2                  | 27-08-2002          |
|   |   |                     | SE | 9902853 A                  | 07-02-2000          |
| <hr/>                                     |   |                     |    |                            |                     |